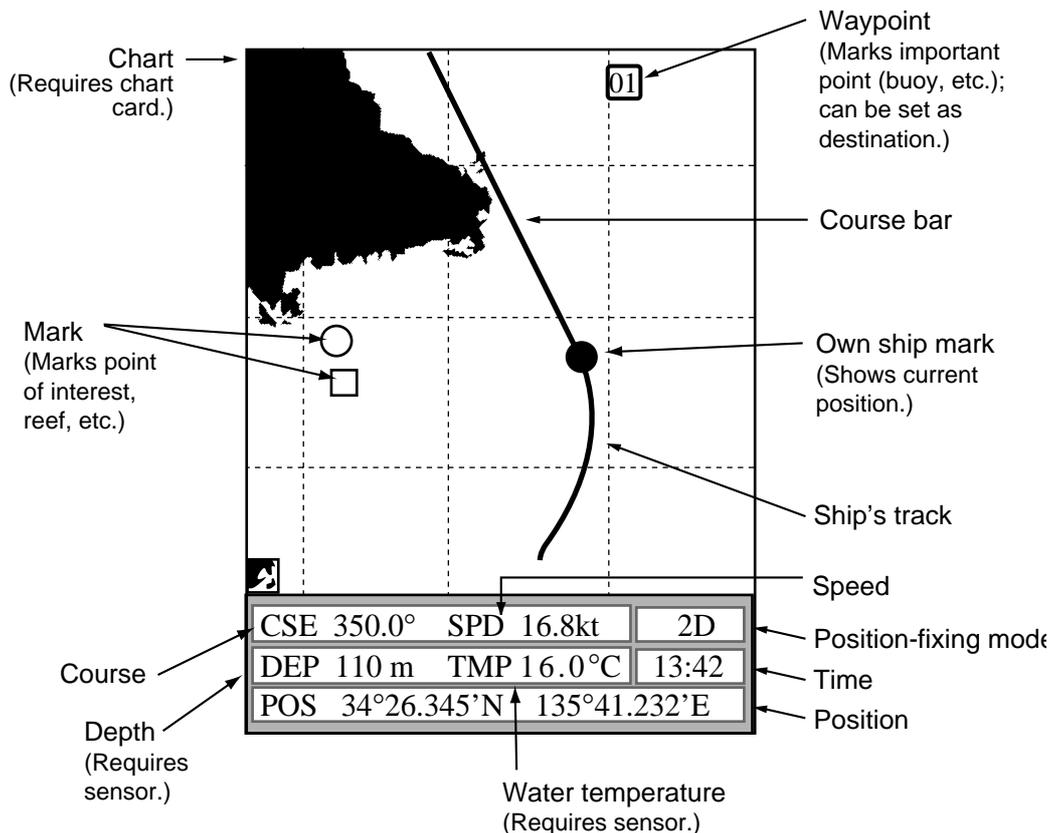# FURUNO®

GP-1610C
Color GPS Plotter

The purpose of this Operator's Guide is to provide the basic operating procedures for this equipment. For more detailed information see the operator's manual.

Waypoint
(Marks important point (buoy, etc.); can be set as destination.)

Chart
(Requires chart card.)

Course bar

Mark
(Marks point of interest, reef, etc.)

Own ship mark
(Shows current position.)

Ship's track

Speed

CSE 350.0°	SPD 16.8kt	2D
DEP 110 m	TMP 16.0°C	13:42
POS 34°26.345'N	135°41.232'E	

Course

Depth
(Requires sensor.)

Position-fixing mode

Time

Position

Water temperature
(Requires sensor.)

Sample plotter display

The GP-1610C is a fully integrated color video plotter and GPS receiver. To find position, simply turn on the power. As your boat moves its track is inscribed on the display.

⚠ SAFETY INSTRUCTIONS

⚠ WARNING

Do not open the equipment.

Hazardous voltage which can cause electrical shock, burn or serious injury exists inside the equipment. Only qualified personnel should work inside the equipment.

Do not disassemble or modify the equipment.

Fire, electrical shock or serious injury can result.

Turn off the power immediately if water leaks into the equipment or the equipment is emitting smoke or fire.

Continued use of the equipment can cause fire or electrical shock.

Do not place liquid-filled containers on the top of the equipment.

Fire or electrical shock can result if a liquid spills into the equipment.

Do not operate the equipment with wet hands.

Electrical shock can result.

Keep heater away from equipment.

Heat can alter equipment shape and melt the power cord, which can cause fire or electrical shock.

⚠ CAUTION

Use the proper fuse.

Use of a wrong fuse can result in fire or permanent equipment damage.

GPS position and velocity accuracies are controlled by the U.S. Department of Defense. Position may be degraded up to 100 meters.

**Do not use the equipment for other than its intended purpose.**

Personal injury can result if the equipment is used as a chair or stepping stool, for example.
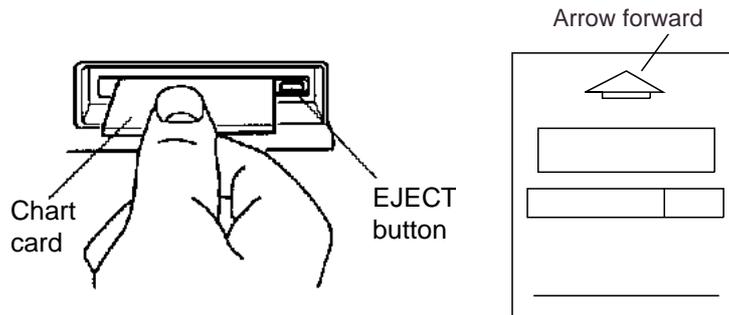
Do not place objects on the top of the equipment.

The equipment can overheat or personal injury can result if the object falls.

Inserting a Chart Card

① Turn off the power.

② Open the chart card drive cover at the bottom of the display unit.
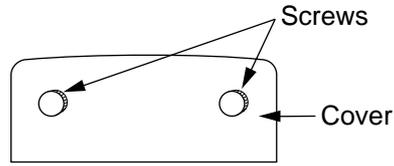
③ Insert chart card label side up, arrow forward.

④ Close the chart card drive cover.

To eject a chart card:

① Open the chart card drive cover.

② Press the EJECT button.

Note: If no chart card is inserted a general world map appears.

Displaying the Plotter Picture

Press the POWER key to turn on the equipment. A beep sounds and shortly thereafter the plotter display appears.

① Press the POWER key.

Results of self-test; displayed for about one second.

```
ROM          OK
RAM          OK
VRAM         OK
Battery      OK




Program No.   = 02522521**
Base Chart No. =
```

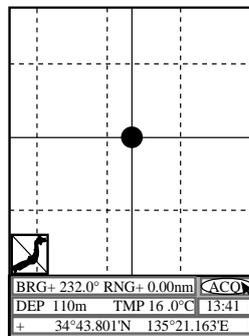Warning on chart card usage; appears for about one minute.

```
– – WARNING– –

NO NATIONAL HYDROGRAPHIC
OFFICE HAS VERIFIED THE
INFORMATION IN THIS COASTLINE
DATA CARD AND NONE ACCEPT
LIABILITY FOR THE ACCURACY OF
REPRODUCTION OR ANY
MODIFICATIONS MADE THEREAFTER.
THIS PRODUCT WITH THIS
COASTLINE DATA CARD DOES NOT
REPLACE THE REQUIREMENT TO
USE THE APPROPRIATE PRODUCTS
FOR NAVIGATION ACCORDING TO
NATIONAL AND INTERNATIONAL
REGULATONS.

    FURUNO ELECTRIC CO., LTD.
```
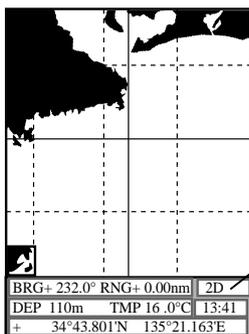
Plotter display (Position being calculated.)

```
BRG+ 232.0° RNG+ 0.00nm  ACQ
DEP 110m      TMP 16 .0°C  13:41
+      34°43.801'N   135°21.163'E
```
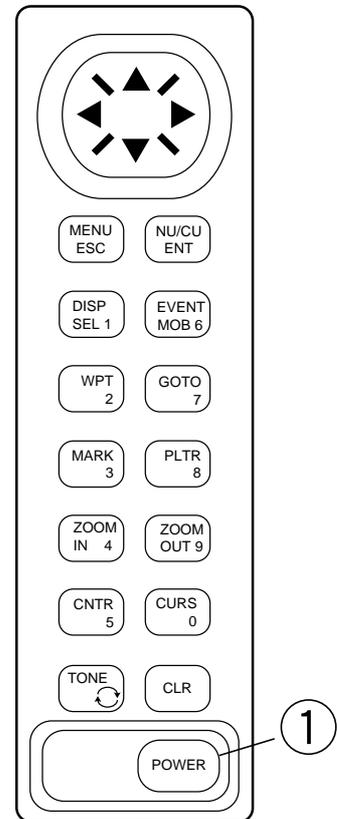
ACQ means acquiring satellite; position is not reliable.

Plotter display (Position now reliable. Chart appears about 20 sec after power is turned on. At initial power on it takes two minutes.)

```
BRG+ 232.0° RNG+ 0.00nm  2D
DEP 110m      TMP 16 .0°C  13:41
+      34°43.801'N   135°21.163'E
```

2D or 3D means position is reliable. Confirm this indication before using the equipment.

MENU ESC

NU/CU ENT

DISP SEL 1

EVENT MOB 6

WPT 2

GOTO 7

MARK 3

PLTR 8

ZOOM IN 4
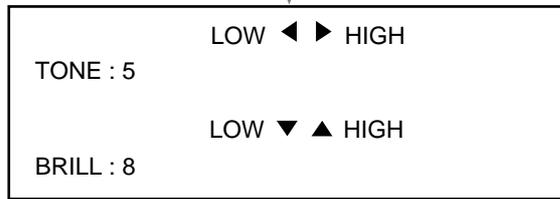
ZOOM OUT 9

CNTR 5

CURS 0

TONE

CLR

POWER ①

Adjusting Tone and Brilliance

① Press the TONE key.

Adjust tone or brilliance within 10 seconds, otherwise the display will be erased.

```
              LOW ◀ ▶ HIGH
TONE : 5

              LOW ▼ ▲ HIGH
BRILL : 8
```
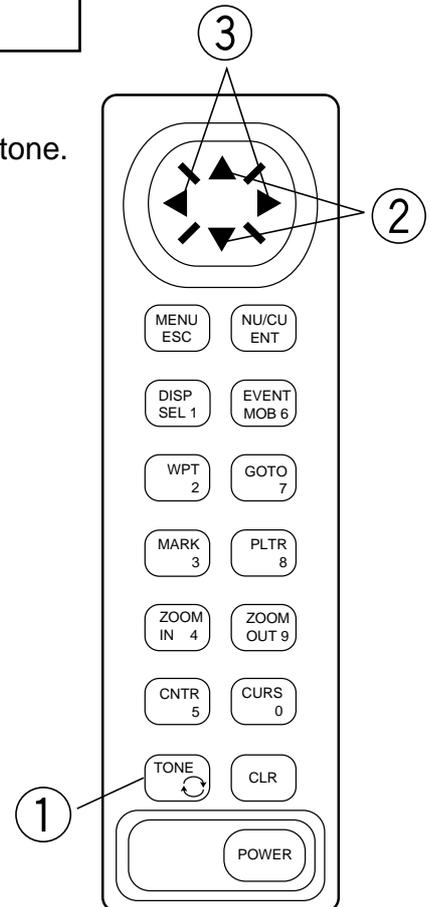
Ten levels of tone are provided.

Eight levels of brilliance are provided.

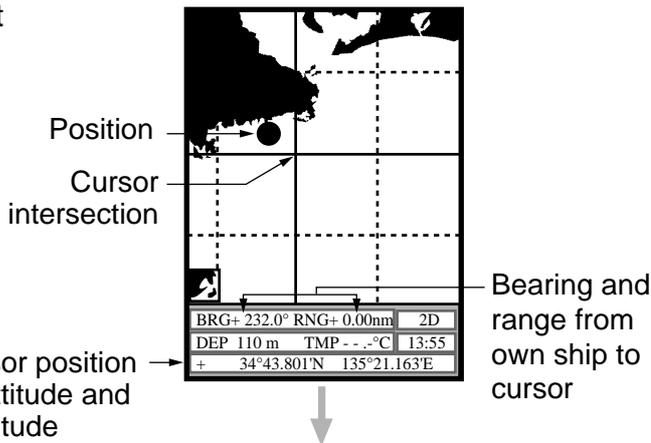② Press ◀ or ▶ to adjust tone.

③ Press ▲ or ▼ to adjust brilliance.
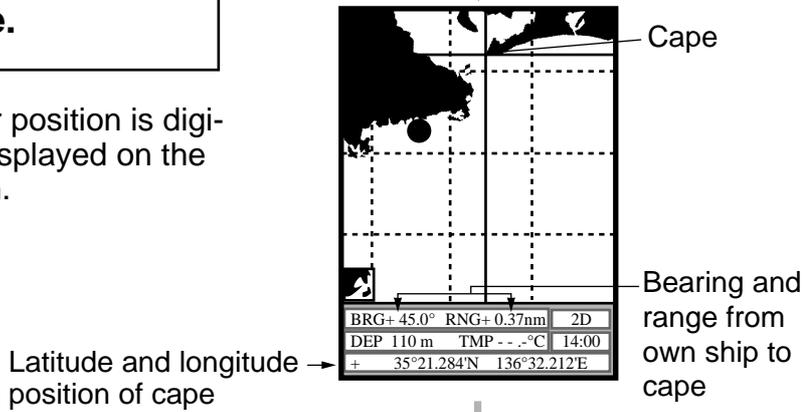
How to Use the Cursor

If the cursor is not displayed press the CURS key.

Position

Cursor intersection

BRG+ 232.0° RNG+ 0.00nm		2D
DEP 110 m TMP - - .-°C		13:55
+ 34°43.801'N 135°21.163'E		

Cursor position in lattitude and longitude

Bearing and range from own ship to cursor

① Press ▲ ▼ ◀ ▶.

Find the position of a cape.

Cursor position is digitally displayed on the screen.

Cape

BRG+ 45.0° RNG+ 0.37nm		2D
DEP 110 m TMP - - .-°C		14:00
+ 35°21.284'N 136°32.212'E		

Latitude and longitude position of cape

Bearing and range from own ship to cape

② Press the CURS key.

Turn off the cursor.

The CURS key alternately displays and erases the cursor.

Speed

CSE 180.0° SPD 0.0kt		2D
DEP 110 m TMP - - .-°C		14:23
POS 34°26.345'N 135°41.232'E		

Course

Position

①

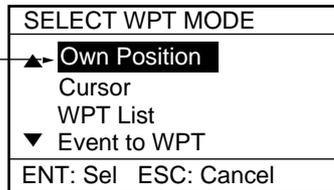|	
MENU ESC	NU/CU ENT
DISP SEL 1	EVENT MOB 6
WPT 2	GOTO 7
MARK 3	PLTR 8
ZOOM IN 4	ZOOM OUT 9
CNTR 5	CURS 0
TONE	CLR
	POWER

②
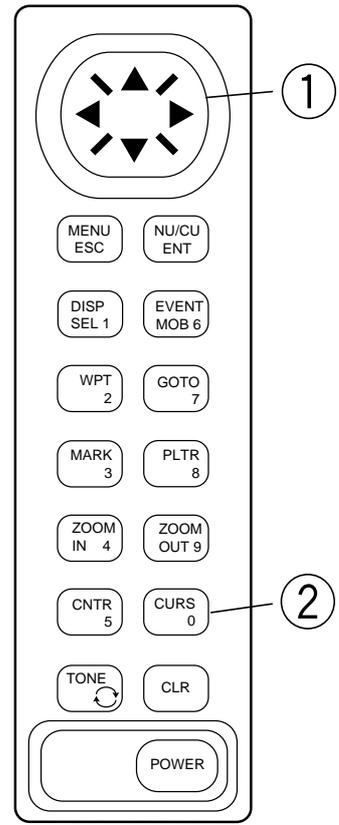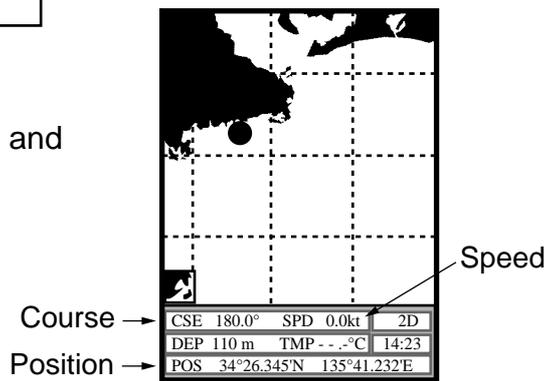
Registering Your Harbor

By registering your harbor as a waypoint, you can later use it as a destination waypoint, when returning home.
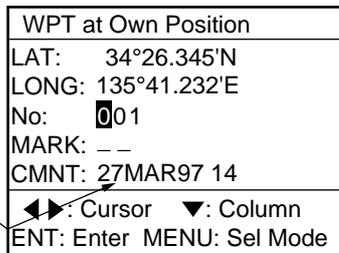
Before departing register your harbor as a waypoint.

Confirm that "Own Position" is in reverse video. If it is not, press ▲ to do so.

① Press the WPT key.

```
SELECT WPT MODE
▲► Own Position
   Cursor
   WPT List
▼  Event to WPT
ENT: Sel   ESC: Cancel
```

② Press the ENT key.

```
 WPT at Own Position
LAT:    34°26.345'N
LONG: 135°41.232'E
No:     001
MARK: _ _
CMNT: 27MAR97 14
◄►: Cursor   ▼: Column
ENT: Enter  MENU: Sel Mode
```
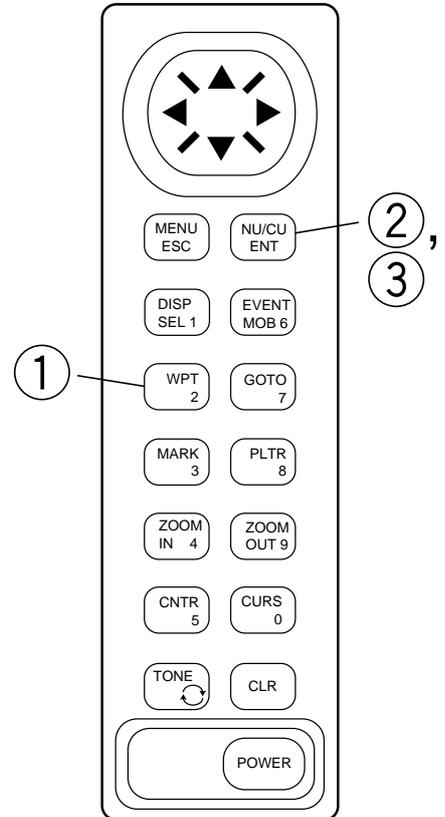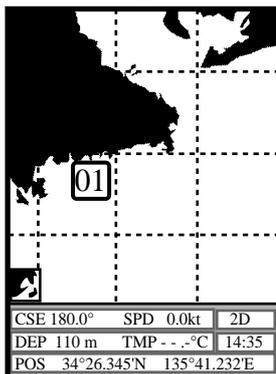
Date and time of entry appears.

③ Press the ENT key.

WPT 01 is displayed at own ship's position. Waypoints can be automatically entered in sequential order.
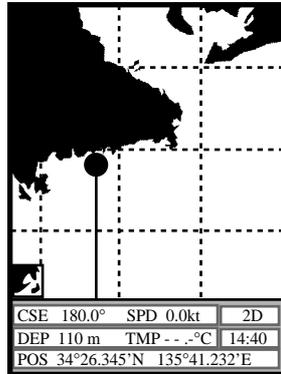
To erase a waypoint, place the cursor on it and press the CLR key.

```
01
```

```
CSE 180.0°      SPD  0.0kt    2D
DEP  110 m      TMP - - .-°C   14:35
POS   34°26.345'N    135°41.232'E
```

MENU/ESC   NU/CU/ENT

②, ③

DISP SEL 1   EVENT MOB 6

① WPT 2   GOTO 7

MARK 3   PLTR 8

ZOOM IN 4   ZOOM OUT 9

CNTR 5   CURS 0

TONE   CLR
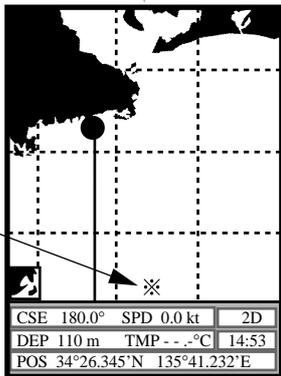
POWER

Setting Destination

When you set a destination, this unit computes the range, bearing and course to the destination. To display your destination on the screen select a small display range or scale. To set as destination a point which is 20 nm from your harbor do the following:

Shrink display range or scale.

① Press the ZOOM OUT key.

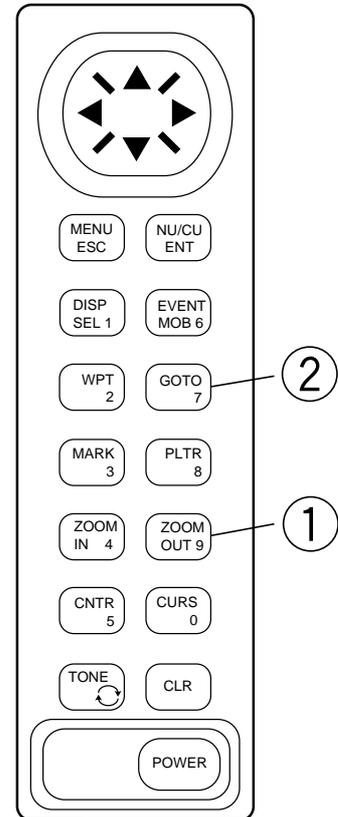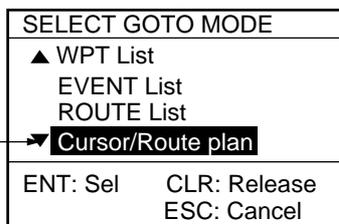Press until position for destination appears.

CSE 180.0°   SPD 0.0kt   2D
DEP 110 m   TMP - - .-°C   14:40
POS 34°26.345'N   135°41.232'E

Destination point

CSE 180.0°   SPD 0.0 kt   2D
DEP 110 m   TMP - - .-°C   14:53
POS 34°26.345'N   135°41.232'E

Set point as destination.

② Press the GOTO key.

SELECT GOTO MODE
▲ WPT List
  EVENT List
  ROUTE List
➡ Cursor/Route plan

ENT: Sel   CLR: Release
              ESC: Cancel

If "Cursor/Route plan" is not in reverse video, press ▼ to do so.

MENU / ESC   NU/CU / ENT
DISP / SEL 1   EVENT / MOB 6
WPT / 2   GOTO / 7   ②
MARK / 3   PLTR / 8
ZOOM / IN 4   ZOOM / OUT 9   ①
CNTR / 5   CURS / 0
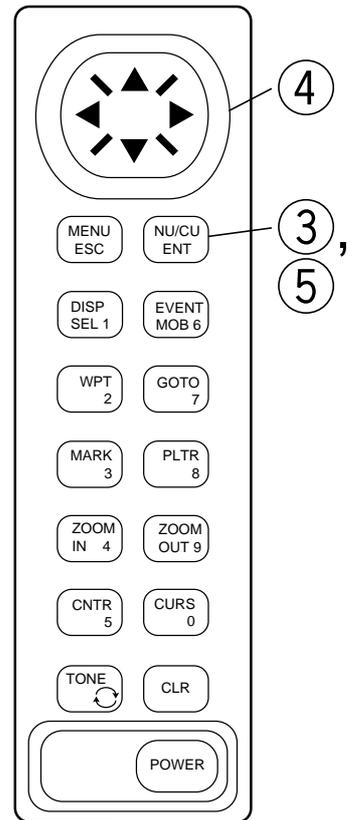TONE   CLR
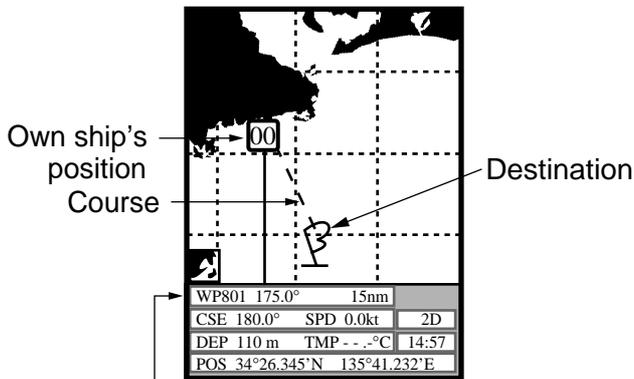POWER

③ Press the ENT key.

```
▲▼◀▶: Cursor
ENT: Set
ENT twice: complete
MENU: SEL Mode
```

④ Place cursor on
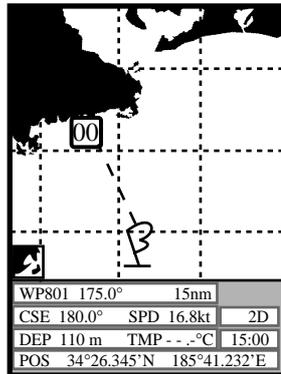   destination.

⑤ Press the ENT key twice.

Current position is
marked as "00" and
the destination with a
flag 🏳. A dashed line
connects current
position and the flag;
it shows shortest
course to destination.
Bearing and range
to the destination
appear at the
bottom of the screen.

Own ship's
position
Course

Destination

```
WP801  175.0°        15nm
CSE  180.0°    SPD  0.0kt     2D
DEP  110 m    TMP - - .-°C   14:57
POS  34°26.345'N    135°41.232'E
```

Bearing and range to destination

④

③,

⑤

MENU
ESC

NU/CU
ENT

DISP
SEL 1

EVENT
MOB 6

WPT
2

GOTO
7

MARK
3

PLTR
8

ZOOM
IN 4

ZOOM
OUT 9

CNTR
5

CURS
0

TONE

CLR

POWER

Sailing for Destination

Steer towards destination.

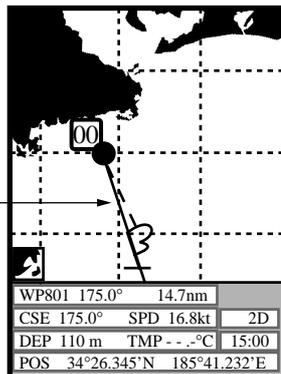| WP801 175.0° | 15nm | |
CSE 180.0°	SPD 16.8kt	2D
DEP 110 m	TMP - - .-°C	15:00
POS 34°26.345'N	185°41.232'E	

Steer towards destination.

Steer the boat so its
track traces along the
course bar, for shortest
course to destination.

Course
bar

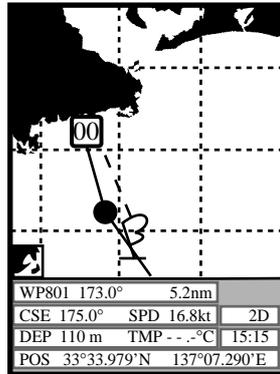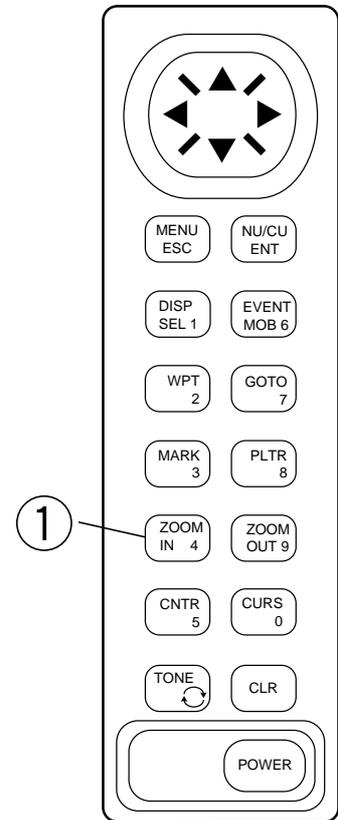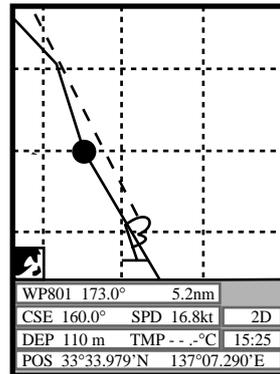| WP801 175.0° | 14.7nm | |
CSE 175.0°	SPD 16.8kt	2D
DEP 110 m	TMP - - .-°C	15:00
POS 34°26.345'N	185°41.232'E	

Arriving at Destination

When nearing your destination, expand the range scale.

Expand the display range or scale.

WP801 173.0°   5.2nm
CSE 175.0°   SPD 16.8kt   2D
DEP 110 m   TMP - - .-°C 15:15
POS   33°33.979'N   137°07.290'E

① Press the ZOOM IN key.

Press the key to obtain detailed view of arrival area.

WP801 173.0°   5.2nm
CSE 160.0°   SPD 16.8kt   2D
DEP 110 m   TMP - - .-°C 15:25
POS   33°33.979'N   137°07.290'E

Entering Marks

Marks may be used to denote the location of fish schools, good fishing spots, reefs, etc.

Fish caught here

```
WP801  173.0°         5.2nm
CSE  173.0°    SPD  16.8kt    2D
DEP  110 m    TMP - - .-°C    16:01
POS  33°33.979'N    137°07.290'E
```
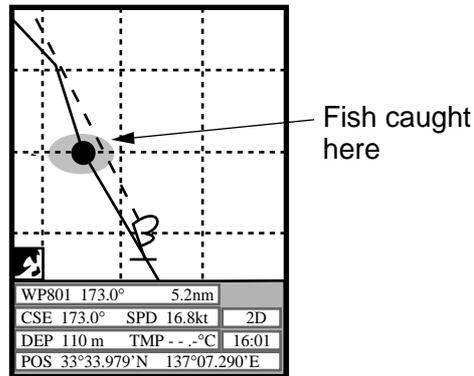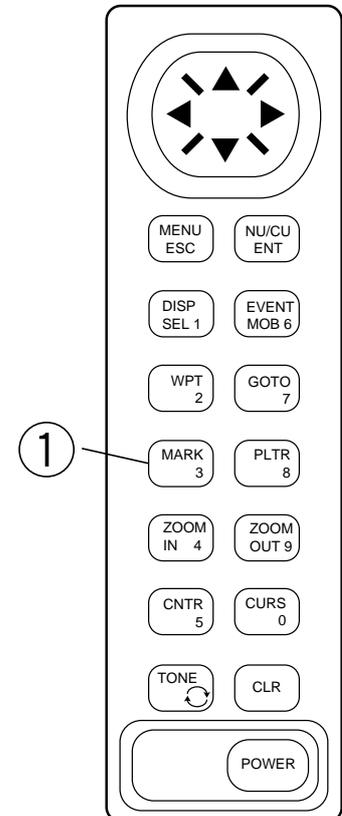
① Press the MARK key.

A red circle (default color and shape) appears at own ship's position the moment the key is pressed.

Red
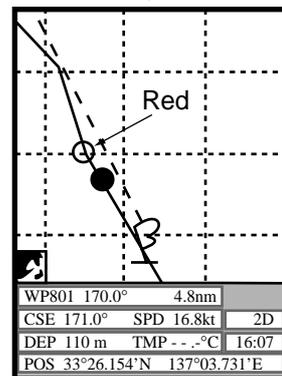
Note: When the cursor is displayed a mark is entered at the cursor position.

To erase a mark, place the cursor on it and press the CLR key.

```
WP801  170.0°         4.8nm
CSE  171.0°    SPD  16.8kt    2D
DEP  110 m    TMP - - .-°C    16:07
POS  33°26.154'N    137°03.731'E
```

MENU ESC	NU/CU ENT
DISP SEL 1	EVENT MOB 6
WPT 2	GOTO 7
MARK 3	PLTR 8
ZOOM IN 4	ZOOM OUT 9
CNTR 5	CURS 0
TONE	CLR
POWER	

①

Changing Mark Shape, Color

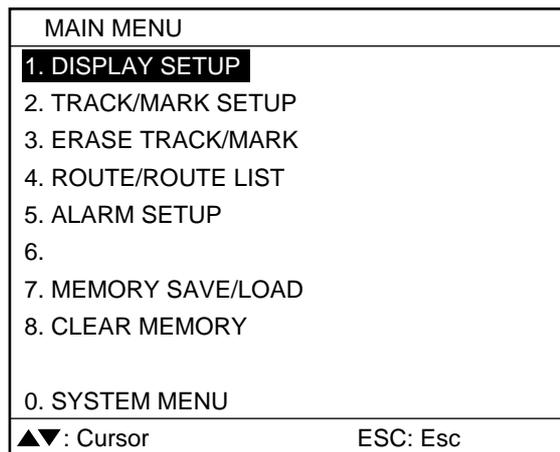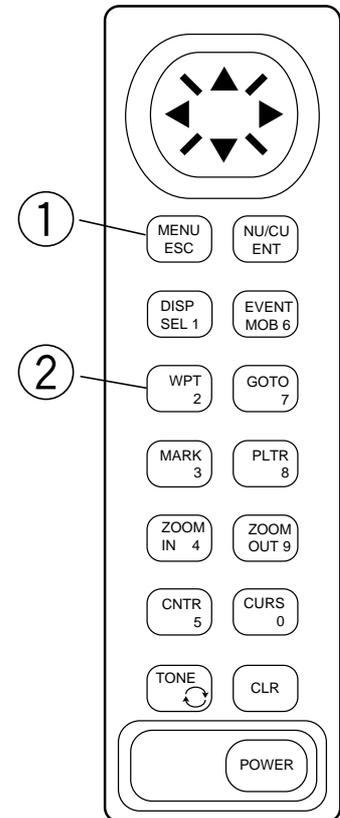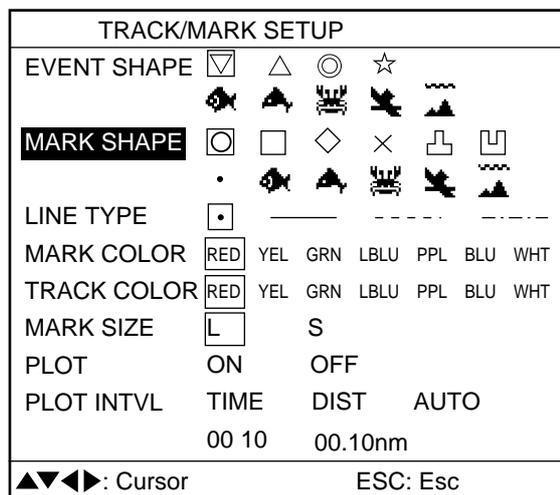You may wish to display marks in different shapes and colors to differentiate between reefs and fish schools, for example. The procedure below shows how to change from red circle to green diamond.

```
WP801  170.0°         4.8nm
CSE  170.0°    SPD  16.8kt    2D
DEP  110 m    TMP - - .-°C    16:09
POS  33°26.154'N    137°03.731'E
```

① Press the MENU key.

```
MAIN MENU

1. DISPLAY SETUP
2. TRACK/MARK SETUP
3. ERASE TRACK/MARK
4. ROUTE/ROUTE LIST
5. ALARM SETUP
6.
7. MEMORY SAVE/LOAD
8. CLEAR MEMORY

0. SYSTEM MENU
▲▼: Cursor              ESC: Esc
```

② Press the [2] key.

```
TRACK/MARK SETUP

EVENT SHAPE  ▽   △   ◎   ☆

MARK SHAPE   ⊙   □   ◇   ×   ⬠   ⬡

LINE TYPE    •   ———   - - - -   -·-·-

MARK COLOR  RED  YEL  GRN  LBLU  PPL  BLU  WHT
TRACK COLOR RED  YEL  GRN  LBLU  PPL  BLU  WHT
MARK SIZE    L         S
PLOT         ON        OFF
PLOT INTVL   TIME      DIST     AUTO
             00 10   00.10nm
▲▼◀▶: Cursor            ESC: Esc
```

③ Press ◀ to select
   MARK SHAPE.

④ Press ▶ twice to select
   "◇".

⑤ Press ▼ twice to select
   MARK COLOR.

⑥ Press ▶ twice to select
   GREEN.

⑦ Press the ESC key.

⑧ Press the MARK key.

Red

Green

WP801 170.0°   3.2nm
CSE 177.0°   SPD 16.8kt   2D
DEP 110 m   TMP - - .-°C   16:15
POS   33°21.832'N   137°07.614'E

④,
⑥

③,
⑤

⑦   MENU   NU/CU
    ESC   ENT

    DISP   EVENT
    SEL 1   MOB 6

    WPT   GOTO
    2   7

⑧   MARK   PLTR
    3   8

    ZOOM   ZOOM
    IN 4   OUT 9

    CNTR   CURS
    5   0
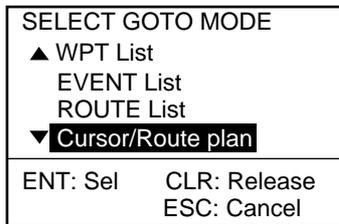
    TONE   CLR

            POWER
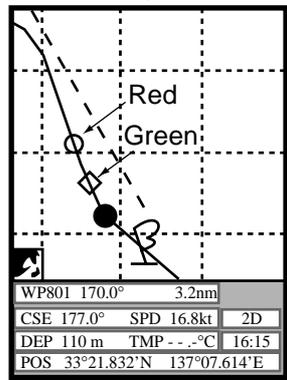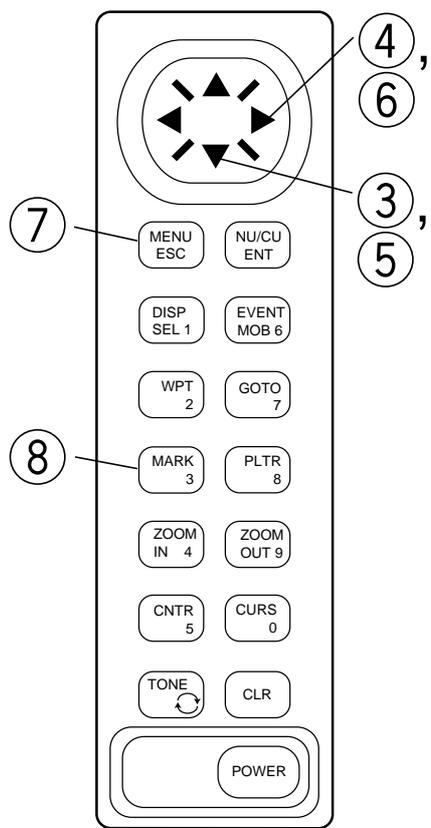
Returning to Harbor

Set your harbor as destination, and the course, range and bearing to it are displayed on the screen.

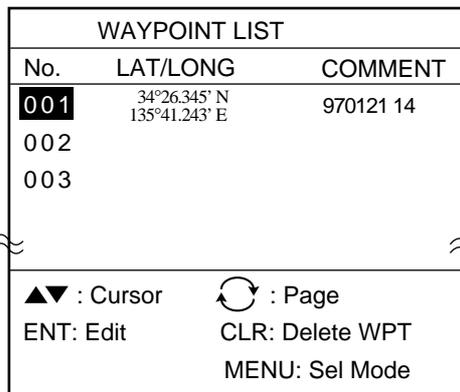Set waypoint 01, which you entered earlier, as destination.
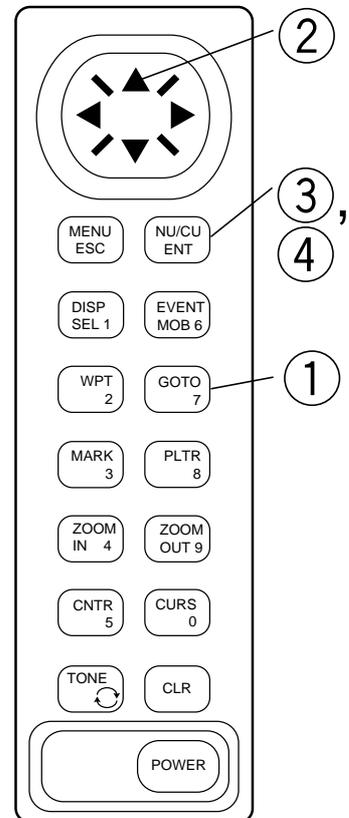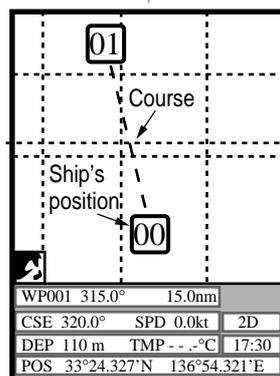
① Press the GOTO key.

```
SELECT GOTO MODE
 ▲ WPT List
   EVENT List
   ROUTE List
 ▼ Cursor/Route plan

ENT: Sel      CLR: Release
              ESC: Cancel
```

② Press ▲ three times to select WPT List.

③ Press the ENT key.

```
           WAYPOINT LIST
 No.      LAT/LONG         COMMENT
 001    34°26.345' N       970121 14
        135°41.243' E
 002
 003



 ▲▼ : Cursor      ⟳ : Page
 ENT: Edit        CLR: Delete WPT
                  MENU: Sel Mode
```

④ Press the ENT key.

Current position is marked by "00." It is connected to destination 01 with a dashed line, which shows shortest course to destination. Range and bearing to the destination appear at the bottom of the screen.

```
              01
                   Course

        Ship's
        position   00


 WP001 315.0°        15.0nm
 CSE 320.0°   SPD 0.0kt     2D
 DEP 110 m   TMP - - .-°C   17:30
 POS  33°24.327'N  136°54.321'E
```

**Cancel destina-
tion; turn off
the equipment.**

⑤ After arriving, press the
GOTO key.

```
SELECT GOTO MODE
 ▲ WPT List
   EVENT List
   ROUTE List
 ▼ Cursor/Route plan

ENT: Sel    CLR: Release
            ESC: Cancel
```

⑥ Press the CLR key.

```
RELEASE GOTO

   ENT: YES
   ESC: NO
```

Destination is cancelled
and course line
disappears.

⑦ Press the ENT key.

⑧ Press the ESC key.

⑨ Press the POWER key.

* 00080794600 *